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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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JUL 20 1993

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of:)
)
Amendment of the Commission's) GEN Docket No. 90-314
Rules To Establish New Personal) ET Docket No. 92-100
Communications Services)

REPLY OF UTAM

The Unlicensed PCS Ad Hoc Committee for 2 GHz Microwave Transition and Management ("UTAM") hereby replies to comments submitted in response to its Report and Recommendations¹ in the above-captioned proceeding. The comments provide overwhelming support for UTAM's proposal to establish an open industry entity to assume relocation and spectrum management functions pursuant to Section 332 of the Communications Act. However, the trade associations for 2 GHz microwave licensees raise several questions about the Entity and the proposed measures to prevent harmful interference to their members' microwave operations. Accordingly, UTAM's responses and clarifications addressing such concerns are set forth below.

¹ Report and Recommendations of the Unlicensed PCS Ad Hoc Committee for 2 GHz Microwave Transition and Management, GEN Docket 90-314 (filed May, 14, 1993) [hereinafter "UTAM Report"].

I. SUMMARY

The opening comments strongly support UTAM's proposal to establish an open industry entity to assume relocation and spectrum management functions for the 1910-1930 MHz band. Manufacturers and microwave licensees fundamentally agree that such an entity would play an indispensable role in funding necessary band clearing and preventing harmful interference. In light of this consensus, the Commission should promptly adopt UTAM's recommendations to recognize a frequency coordinator for unlicensed PCS and require all parties seeking equipment authorization to participate in a relocation cost compensation fund.

Several commentors, however, request further details or clarifications concerning the feasibility and practicality of UTAM's open industry entity. In order to allay these fears, UTAM is pleased to report that progress has occurred in the

following important requests:

- Options for determining the basis for relocation cost compensation fees are being considered and recommendations concerning the optimum system will be prepared and submitted to the Commission.

proposal intended to create any new or different dispute resolution processes.

Second, UTAM's proposal for non-nomadic systems and devices is critical to early deployment of unlicensed PCS and to ensuring funding for essential band clearing. To prevent harmful interference to 2 GHz microwave licensees, UTAM identified a package of important safeguards that includes: (1) limiting early deployment to systems and devices with fixed base stations; (2) requiring prior coordination before base stations are activated; (3) requiring that associated portable devices be designed so that they cannot operate outside the fixed base stations' service areas; (4) requiring appropriate labelling and instructions; and, (5) imposing forfeitures for rule violations.

Notwithstanding this comprehensive program to preclude interference, the 2 GHz microwave community expresses concerns that identifying sources of interference and ensuring compliance may be impossible given the ability of consumers to move these systems and devices after initial frequency coordination. In order to alleviate these fears, UTAM now proposes to expand its program to include a blanket requirement that anyone seeking equipment authorizations for non-nomadic systems or devices must also show that base stations will be rendered inoperable if the consumer disconnects the system or device for any extended period of

time and that reactivation of base stations will require renewed prior coordination.

Third, UTAM recognizes that deployment of unlicensed PCS in the 1910-1930 MHz band will require consideration of potential adjacent channel interference to 2 GHz microwave systems in contiguous bands. However, this is not simply an unlicensed PCS problem, but rather an issue affecting deployment of licensed PCS systems as well. UTAM member companies have been actively participating in TR 14.11, a subcommittee of TIA's TR 14 Committee, to develop interference criteria in compliance with the non-interference requirements of the Commission's rules, and UTAM has now initiated a formal liaison with that group.²

As a separate matter, several organizations involved in licensed PCS services express concern about interoperability of licensed and unlicensed PCS systems as well as the possibility of some "head start" by unlicensed systems and devices into the marketplace. In response, UTAM notes that its proposed rules specifically provide for interoperability and that the harsh realities of the spectrum coordination and band clearing facing the unlicensed PCS industry hardly suggest that an unlicensed PCS "head start" is likely.

² UTAM notes that it advocates completion of Bulletin 10 F -- which seeks to resolve adjacent channel interference concerns -- on an expedited basis to provide the industry with necessary guidance in this regard.

Moreover, given the considerable differences between unlicensed products and licensed services, there could not be any conceivable public interest basis for delaying the development of either industry sector in any event.

In view of the foregoing, UTAM respectfully submits that its proposals for unlicensed PCS systems and devices should be promptly adopted. UTAM's plan and proposed rules ensure prompt deployment of new products for the American public consistent with safeguarding the rights of incumbent microwave licensees.

II. THE COMMENTS DEMONSTRATE OVERWHELMING SUPPORT FOR ESTABLISHMENT OF AN OPEN INDUSTRY ENTITY TO FUND AND MANAGE THE MICROWAVE RELOCATION PROCESS

A. Virtually All Commentors Acknowledge The Need For The FCC To Endorse The Entity Concept

To effectuate the Commission's guidelines adopted in ET Docket No. 92-9, UTAM proposed the formation of an industry entity to assume relocation and spectrum management functions. Virtually every party commenting in this

~~regarding urging the FCC to endorse the entity concept.~~

They recognize the compelling need for a centralized entity to resolve the unique problems associated with relocation of incumbent licensees and deployment of unlicensed PCS devices and systems.⁴ For example, NATA applauds UTAM for stepping "up to the challenge of designing a collective mechanism to solve the spectrum clearing problem" and producing "a carefully thought-out and sensible proposal."⁵ PCS Action similarly commends UTAM's proposal as a "complete, fair, workable, reasonably efficient scheme [which is] ripe for positive Commission action."⁶

³(...continued)
Comments of Motorola, Inc. ("Motorola") at 1-2; Comments of North American Telecommunications Association ("NATA") at 4-6; Comments of Northern Telecom at 2; Comments of Pacific Telesis Group ("Pactel") at 5; Comments of PCS Action at 4-5; Comments of Public Safety Microwave Committee at 5; Comments of ROLM at 2-3; Comments of Time Warner Telecommunications ("Time Warner") at 2-3. Southwestern Bell Corporation ("Southwestern Bell") and Utilities Telecommunications Council ("UTC") are the only two parties to suggest that the Commission defer action on UTAM's proposals. Comments of Southwestern Bell at 8; Comments of UTC at 17-18. As explained in Section II.B. of this reply, developments subsequent to UTAM's initial filing should dispel the concerns these parties raise about the Entity's feasibility and practicality.

⁴ Comments of AMT and DSST at 5; Comments of ITA at 6-7; Comments of McCaw at 3.

⁵ Comments of NATA at 6.

⁶ Comments of PCS Action at 4.

Commentors particularly support UTAM's proposal as a solution to the "free rider" problem.⁷ Acknowledging that there is little incentive for a prospective PCS provider to undertake the cost and responsibility of relocating the incumbent microwave providers for the benefit of all PCS manufacturers and users, they observe that a "joint effort is required,"⁸ and that the proposed entity will "work well in solving the 2 GHz microwave compensation and relocation issues."⁹ ITA states that making "participation in the Unlicensed PCS Entity a prerequisite for equipment approval is both well-conceived and essential to the process."¹⁰

The record further reveals that expeditious approval of UTAM's proposed entity will be in the public interest, "enabl[ing] the telecommunications industry to meet the demand for this new technology in a timely manner," eliminating constraints upon the flow of information, and allowing "American firms to improve their competitive

⁷ Comments of AMT and DSST at 5; accord, Comments of Cox at 5; Comments of ITA at 6-7; Comments of Northern Telecom at 2-3.

⁸ Comments of Northern Telecom at 2-3 (emphasis added).

⁹ Comments of AMT and DSST at 5; see also Comments of Northern Telecom at 2-3.

¹⁰ Comments of ITA at 6-7 (emphasis added).

position overseas."¹¹ In contrast, Northern Telecom notes that, if the Commission fails to promptly endorse UTAM's proposal, the resulting impact on the deployment of unlicensed PCS services would be to "impose an unnatural, inefficient restraint upon the market" and significantly retard or hinder the development of these systems.¹²

Finally, commentators overwhelmingly view UTAM's proposal as fair and equitable to both unlicensed PCS manufacturers and incumbent microwave licensees. Northern Telecom praises the value of a consortium type entity as the "most effective method" to ensure fairness, because it enables both large and small companies to participate on a reasonable basis.¹³ McCaw likewise commends UTAM's proposal for preserving the rights of the 2 GHz microwave licensees "on a basis that is fair to all interested parties."¹⁴ Accordingly, the Commission should proceed expeditiously to endorse UTAM's entity concept as a necessary mechanism to secure the deployment of unlicensed PCS devices and systems in the public interest.

¹¹ Comments of Northern Telecom at 2; see also Comments of NATA at 2-4.

¹² Comments of Northern Telecom at 5.

¹³ Comments of Northern Telecom at 5; see also Comments of AT&T at 2-3 (UTAM Report proposes an "equitable method").

¹⁴ Comments of McCaw at 3.

**B. Substantial Progress Has Been Made In
Establishing The Open Industry Entity**

In view of this broad consensus, UTAM has moved forward to ensure that an open industry entity is established and a financing plan in place in the event of favorable Commission action. As the following "progress report" demonstrates, these developments fully address any questions raised about the logistics of establishing the entity, the timing and manner in which it will come into being, and its ground rules for assuming the role and functions set forth in UTAM's Report.¹⁵

**1. UTAM Has Already Taken Steps To Establish
"UTAM, Inc.," And To Structure Its Membership
Requirements So As To Ensure Equitable
Participation In Its Governance**

Efforts are currently underway to implement UTAM's proposals. "UTAM, Inc.," has been legally incorporated in Delaware as a not-for-profit membership corporation. UTAM, Inc.'s, Certificate of Incorporation is attached as Appendix A of these reply comments.

UTAM, Inc., will be governed by a Board of Trustees, elected by the membership, with day-to-day management provided by an Executive Committee appointed by the Board. Membership in UTAM, Inc., will be extended by either a modest

¹⁵ See Comments of Southwestern Bell at 8-9; Comments of UTC at 5.

voluntary advance payment of fees prior to the sale or marketing of unlicensed PCS systems or devices, or will automatically be granted when a manufacturer makes its first payments under an agreement to participate in UTAM, Inc.'s, relocation cost compensation pool. In accordance with UTAM's stated commitment to ensure full and fair participation by manufacturers of all sizes, voting rights will be based on "one member, one vote" principles.

**2. UTAM Has Identified Potential Sources
Of Financing For UTAM, Inc.**

In addition to working out the details of UTAM, Inc.'s, corporate structure, governance and membership, UTAM has explored a variety of possible sources of financing to secure

~~the capital necessary to begin operation of the network~~

Additional funding to finance UTAM, Inc.'s, first year operating costs will likely be secured from other sources.¹⁶ A potential lender with experience in the telecommunications arena has now been identified who has expressed a willingness to explore the possibility of financing UTAM, Inc.'s, initial operations. UTAM is currently in the process of developing the detailed business plan necessary to satisfy lending requirements. This requires the collection of marketing projections on a confidential basis and the expert analysis of that data to make the business case for UTAM, Inc.'s, operations. UTAM will duly report the status of these efforts to the FCC upon their completion.

**3. Options For Determining Fee Arrangements
Are Being Considered And Recommendations
Concerning The Optimum System Will Be
Prepared And Submitted For Commission
Review**

Questions have been raised concerning the fee structure for participation in the Entity and the manner in which equitable participation in its cost compensation mechanism may be assured. Specifically, commentators ask how the Entity plans to assess fees necessary to finance microwave

¹⁶ Under the financing plan envisioned, these funds together with any advance payments made by UTAM, Inc.'s, members will be repaid by the royalties on the sale or marketing of unlicensed PCS devices and systems discussed above.

relocations and coordinate non-nomadic deployment¹⁷ as well

including protection of licensed microwave systems from harmful interference. In its Report, UTAM has proposed workable mechanisms for effectuating that commitment. Adoption of those proposals by the FCC together with the further actions detailed below will ensure that protected systems do not suffer harmful interference.

A. UTAM's Proposals Would Be Consistent With Rules Adopted In The PCS And Emerging Technologies Dockets

UTAM emphasized in its Report that its proposals contemplate complete adherence to the Commission's requirements for unlicensed PCS deployment established in its ongoing Emerging Technologies proceedings. These requirements include the protection of existing 2 GHz private microwave licensees from harmful interference from new PCS devices and systems and the rights of those licensees to full cost compensation and comparable alternative facilities upon relocation to other transmission media. Thus, concerns raised by some commentators that UTAM's proposals may be read to alter or modify these basic requirements or otherwise fail to comply with the Commission's Rules as ultimately adopted are unfounded.¹⁹ Rather, UTAM has made clear in its Report that its proposals are predicated on the assumption that establishment of the

¹⁹ UTAM Report at 5.

entity and equipment authorization regulations would strictly comply with those requirements.²⁰

Nor would adoption of UTAM's proposal result in the creation of any new or different dispute resolution procedures.²¹ The Entity's role in interference and compensation disputes between unlicensed PCS providers and microwave licensees will be limited to providing a central forum for representation of the unlicensed PCS manufacturers' interests.²² The Entity would thus participate -- in place of potentially hundreds of individual manufacturers -- in whatever dispute resolution forum is established by the Commission in its ongoing proceedings.²³ The Entity would not be a decisionmaker, but only a party to those proceedings.

²⁰ Id. at 5-8.

²¹ See, e.g., Comments of API at 19; Comments of AAR at 8; Comments of UTC at 5.

²² See UTAM Report at 16.

²³ See First Report and Order and Third NPRM, 7 FCC Rcd at 6890-91.

**B. Non-Nomadic Devices Would Be Deployed Consistent
With The Co-Primary Status Of Unlicensed Devices
In The Allocated Spectrum**

UTAM has shown that interim marketing of non-nomadic unlicensed devices is important to bring the benefits of PCS to the public at an early date, to raise revenues for microwave relocation, and to ensure the financial viability of unlicensed PCS.²⁴ As UTAM recognizes, such devices must co-exist with incumbent microwave systems on a co-primary basis.²⁵ UTAM therefore appreciates the cautionary concerns raised by a number of parties that deployment of non-nomadic unlicensed PCS devices and systems prior to complete band clearing should not present a risk of unacceptable interfer-

geographically specific base stations. Such non-nomadic devices and systems would be required to comply with all technical criteria established for unlicensed PCS generally as well as the following additional requirements:

First, UTAM's proposed rules would require that non-nomadic devices and systems must be frequency coordinated through the Entity prior to activation. A non-nomadic device or system would thereby be coordinated for operation only on particular frequencies in a specific geographic area. It can be expected that, as the relocation process proceeds, the "cleared" zones within which non-nomadic devices can be coordinated will expand commensurately.

Such frequency coordination is today successfully utilized to avoid interference in a number of radio services, and there is no reason to suspect that it will not be equally effective in this context.²⁶ Although no coordination is foolproof, UTAM submits that this mechanism, together with the additional measures recommended in the UTAM Report, will provide a high degree of confidence that harmful interference can be avoided.

Second, UTAM has suggested that portable devices associated with non-nomadic base stations be designed so as to provide for the disabling of such devices when removed from

²⁶ See, e.g., 47 C.F.R. Part 90 (covering the use of frequency coordination in the private land mobile services).

the service area of their base station. This would ensure that these easily transported units could not transmit outside of the base station's coordinated zone of operations and become a source of interference to microwave systems.

Third, UTAM's proposed detailed labelling and instructional requirements would underscore the obligations of users to avoid interference to licensed microwave operations. These statements would also notify users that they must take all necessary steps to cure any incidence of interference and that they may be liable for the costs of any such remedy as well as forfeitures to the Commission for violation of the rules.²⁷

C. If Necessary, UTAM's Program May Be Expanded To Incorporate An Additional Technical Requirement To Disable Non-Nomadic Systems And Devices If Disconnected And Relocated

UTAM is willing to explore adoption by the FCC of an additional technical requirement suggested by the 2 GHz microwave community to disable the base stations themselves -- as opposed to just the adjunct portable units -- if moved from their coordinated locations. Specifically, some microwave interests have expressed concerns regarding the potential difficulty in identifying the sources of interference from early non-nomadic deployments in view of the

²⁷ Utam Report at 20-21.

UTAM wishes to reiterate its commitment both to avoiding interference to incumbent licensed microwave systems and to complete band clearing as its ultimate goal. Given their co-primary status, neither unlicensed PCS devices and systems nor microwave operations should be required to tolerate harmful interference from one another. UTAM believes that adoption by the FCC of its recommendations as supplemented herein will ensure that result throughout the band clearing process.

D. UTAM Is Working To Resolve Adjacent Channel Interference Concerns To The Satisfaction Of All Interested Parties

Some of the fixed microwave trade associations are concerned about the potential for interference to adjacent channel microwave operations and argue that UTAM has not adequately considered protecting such systems. Adjacent channel interference is certainly an issue for all PCS allocations because the typical microwave receiver operates with a bandwidth of about 18 MHz which is nearly twice as wide as the authorized bandwidth of most microwave transmitters. Microwave systems transmitting on the carrier frequencies 1905 MHz and 1935 MHz will deploy receivers having passbands that fall within the unlicensed PCS spectrum at 1910-1930 MHz band.

This issue is of concern to the entire PCS industry; it is not unique to unlicensed devices. Accordingly, UTAM understands that TIA's TR 14.11 subcommittee is working to develop a solution. UTAM believes that the TR 14.11 subcommittee has both the credibility and expertise to address these concerns and would support incorporation of any resolution adopted by that body in the relevant licensed and unlicensed PCS rules. Additionally, UTAM wishes to reiterate its commitment to initiating and maintaining a dialogue with the microwave community to help resolve this concern.

IV. THE FCC SHOULD MAINTAIN ITS POLICY OF FOSTERING THE RAPID INTRODUCTION OF NEW PCS TECHNOLOGIES

Various commentors have expressed concerns that rapid unlicensed PCS deployment could somehow adversely affect the technical interoperability of licensed and unlicensed PCS or result in a "head start" advantage for unlicensed PCS providers.³⁰ As shown below, these concerns are either inappropriate or misplaced. As numerous commentors have urged, the Commission should ensure the expeditious deployment of all forms of PCS in the public interest.³¹

³⁰ See Comments of Cox at 7; Comments of PCS Action at 3; Comments of Southwestern Bell at 6; Comments of Time Warner at 6.

³¹ See, e.g., Comments of Northern Telecom at 2; Comment of NATA at 4. See FCC News Release, FCC Amends Rules To Establish New Narrowband Personal Communications Services (released June 24, 1993); PCS NPRM, 7 FCC Rcd at 5679, 5693.

Initially, the interoperability of licensed and unlicensed PCS devices and systems is expressly addressed in Subpart C of UTAM's proposed rules. That rule section provides that such dual use devices and systems "may be deployed in accordance with appropriate restrictions under this subpart."³² Any further interoperability issues can be expected to be resolved by the marketplace.

Concerns regarding a potential head start advantage for unlicensed PCS in relocating incumbent microwave licensees likewise are unwarranted. The entire record in these dockets